

- 1 -

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

(i) APPLICANT: NG, Frank M.

JIANG, Woei-Jia

(ii) TITLE OF INVENTION: Treatment of Obesity

(iii) NUMBER OF SEQUENCES: 33

## (iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Metabolic Pharmaceuticals Ltd.

(B) STREET: 10 Wallace Avenue

(C) CITY: Toorak

(D) STATE: Victoria

(E) COUNTRY: Australia

(F) ZIP: 3142

## (v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk

(B) COMPUTER: IBM PC compatible

(C) OPERATING SYSTEM: PC-DOS/MS-DOS

(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

## (vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER:

(B) FILING DATE:

## (vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: PO9001

(B) FILING DATE: 8 September 1997

(C) APPLICATION NUMBER: PP0398

(D) FILING DATE: 13 November 1997

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09506054-042000

- 2 -

## (2) INFORMATION FOR SEQ ID NO: 1:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear or cyclic

## (ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: hGH 177-191

Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	Val	Glu	Gly	Ser	Cys	Gly	Phe
1				5					10					15

## (2) INFORMATION FOR SEQ ID NO: 2:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear or cyclic

## (ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION:

<u>X1m</u>	Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	Val	Glu	Gly	Ser	Cys	Gly	Phe	<u>X2n</u>
1				5					10					15		

## (2) INFORMATION FOR SEQ ID NO: 3:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear or cyclic

## (ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION:

<u>Y1</u>	Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	Val	Glu	Gly	Ser	Cys	Gly	Phe
1				5					10					15	

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear or cyclic

(xi) SEQUENCE DESCRIPTION:

Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe Y2  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Cys(Acm) at 182 and 189

Leu Arg Ile Val Gln Cys (Acm) Arg Ser Val Glu Gly Ser Cys (Acm) Gly  
Phe  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Lys at 179

Leu Arg Lys Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

- 4 -

## (2) INFORMATION FOR SEQ ID NO: 7:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

## (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with CONH<sub>2</sub> replacing COOH

Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe -CONH<sub>2</sub>  
 1 5 10 15

## (2) INFORMATION FOR SEQ ID NO: 8:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

## (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with CH<sub>3</sub>CO-HN replacing NH<sub>2</sub>

CH<sub>3</sub>CO-HN Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
 1 5 10 15

## (2) INFORMATION FOR SEQ ID NO: 9:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

## (ii) MOLECULE TYPE: peptide

## (xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 183

Leu Arg Ile Val Gln Cys Ala Ser Val Glu Gly Ser Cys Gly Phe  
 1 5 10 15

00024045080560

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Lys at 183

Leu Arg Ile Val Gln Cys Lys Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: bicyclic

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Lys at 183 and amide bond between 183 and 186

Leu Arg Ile Val Gln Cys Lys Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(xi) SEQUENCE DESCRIPTION:hGH 177-191 with H replacing NH<sub>2</sub>

H Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Cys(SH) at 182 and 189

Leu Arg Ile Val Gln Cys(SH) Arg Ser Val Glu Gly Ser Cys(SH) Gly Phe  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with D-Ala at 187 and 190

Leu Arg Ile Val Gln Cys Arg Ser Val Glu D-Ala Ser Cys D-Ala Phe  
1 5 10 15

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Pen at 182 and 189

Leu Arg Ile Val Gln Pen Arg Ser Val Glu Gly Ser Pen Gly Phe  
1 5 10 15

- 7 -

## (2) INFORMATION FOR SEQ ID NO: 16:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 191

Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	Val	Glu	Gly	Ser	Cys	Gly	<u>Ala</u>
1				5					10					15

## (2) INFORMATION FOR SEQ ID NO: 17:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 190

Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	Val	Glu	Gly	Ser	Cys	<u>Ala</u>	Phe
1				5					10					15

## (2) INFORMATION FOR SEQ ID NO: 18:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 178

Leu	<u>Ala</u>	Ile	Val	Gln	Cys	Arg	Ser	Val	Glu	Gly	Ser	Cys	Gly	Phe
1				5					10					15

- 8 -

## (2) INFORMATION FOR SEQ ID NO: 19:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: Tyr - hGH 177-191

Tyr Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

## (2) INFORMATION FOR SEQ ID NO: 20:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: Lys - hGH 177-191

Lys Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

## (2) INFORMATION FOR SEQ ID NO: 21:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

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- 9 -

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Lys at 178

Leu Lys Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO: 22:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 177

Ala Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO: 23:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 179

Leu Arg Ala Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15

(2) INFORMATION FOR SEQ ID NO: 24:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

- 10 -

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 180

Leu Arg Ile Ala Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1                      5                      10                      15

(2) INFORMATION FOR SEQ ID NO: 25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 181

Leu Arg Ile Val Ala Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1                      5                      10                      15

(2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 182

Leu Arg Ile Val Gln Ala Arg Ser Val Glu Gly Ser Cys Gly Phe  
1                      5                      10                      15

(2) INFORMATION FOR SEQ ID NO: 27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

- 11 -

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 184

Leu	Arg	Ile	Val	Gln	Cys	Arg	<u>Ala</u>	Val	Glu	Gly	Ser	Cys	Gly	Phe
1				5					10					15

(2) INFORMATION FOR SEQ ID NO: 28:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 185

Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	<u>Ala</u>	Glu	Gly	Ser	Cys	Gly	Phe
1				5					10					15

(2) INFORMATION FOR SEQ ID NO: 29:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 186

Leu	Arg	Ile	Val	Gln	Cys	Arg	Ser	Val	<u>Ala</u>	Gly	Ser	Cys	Gly	Phe
1				5					10					15

(2) INFORMATION FOR SEQ ID NO: 30:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 15 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

- 12 -

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 187

Leu Arg Ile Val Gln Cys Arg Ser Val Glu Ala Ser Cys Gly Phe  
1                      5                      10                      15

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 188

Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ala Cys Gly Phe  
1                      5                      10                      15

(2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: hGH 177-191 with Ala at 189

Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Ala Gly Phe  
1                      5                      10                      15

- 13 -

## (2) INFORMATION FOR SEQ ID NO: 33:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: cyclic

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: Lys-Lys- hGH 177-191

Lys Lys Leu Arg Ile Val Gln Cys Arg Ser Val Glu Gly Ser Cys Gly Phe  
1 5 10 15